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EXAMINER

ORURONGBE, OLATUNDE S

ART UNIT

PAPER NUMBER

1796

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/584,232

Applicant(s)

NISHIUMI ET AL.

Examiner

OLATUNDE S. OJURONGBE

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date 20070420
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to because of the following informalities:

Claim 7 recites "The composition according claim 1,....."; the word "to" is omitted from the claim.

Claims 20 and 21 recite "A two part composition in accordance with..."; since "according to" is used in other claims, for claim language consistency, "in accordance with" should be changed to "according to".

Appropriate correction is required.

Specification

2. The disclosure is objected to because of the following informalities:

The examiner notes that there is no consistency in the name for zinc pyrithione throughout the disclosure, sometimes it is referred to as zinc pyrithione as in [0008] and other times zinc pyrrithion, as in [0070], since the compound of the formula 3 of the disclosure [see 0063] is zinc pyrithione, for consistency purposes, zinc pyrrithion should be changed to zinc pyrithione.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7, 8, 20 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites "The composition according to claim 1 comprising (B) 1-300 parts by weight of a calcium carbonate powder that contains iron oxide...."; it is unclear whether the iron oxide of claim 7 is the same as source of ferrous ion of claim 1, as iron oxide encompasses both iron (III) and iron (II), whereas ferrous ions of claim 1 is iron (II).

Dependent claim 8 is rejected for the same reason.

Claim 20 recites "A two part composition in accordance with claim 19 wherein said source of ferrous ions comprises an impurity in an inorganic filler". It is unclear what limitation(s) the applicant tries to set, as it is unclear whether the ferrous ions comprises impurity, an inorganic filler comprises impurity or that the ferrous ions are comprised as impurity in an inorganic filler.

Dependent claim 21 is rejected for the same reason.

Claims 20 and 21 could not be examined for prior art purposes based on this.

Claim 22 provides for the use of an agent in accordance with claim 15 for inhibiting or reducing discoloration of a diorganopolysiloxane composition, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 22 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 1- 6 and 9-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amidaiji et al (US 6,451,437)**.

In the rejection that follows iron (ii) oxide is the same as ferrous oxide.

Regarding **claims 1, 5 and 9**, Amidaiji et al teaches a curable composition comprising (A), an organopolysiloxane having functional groups capable of condensation reaction at both molecular terminals thereof (abstract), and further teaches that it is preferred that the organopolysiloxane (A) of the invention be represented by the formula [alpha] (col.4, lines 27-43); Amidaiji et al further teaches the composition comprising organic antifouling agents which include metal pyrithione compounds, and that the preferred organic antifouling agents include copper pyrithione and zinc pyrithione; said organic antifouling agent is contained in an amount of 0.1 to 20% by weight per 100 parts by weight of solid contents of the composition (col.15, line 65-col.16, line 46); Amidaiji et al further teaches the composition comprising pigments, examples of which include iron oxide powder (col.17, lines 39-40).

The organopolysiloxane (A) represented by the formula [alpha] of Amidaiji et al is a diorganopolysiloxane, hence the composition of Amidaiji et al is a diorganopolysiloxane composition.

Though Amidaiji et al does not teach a diorganopolysiloxane composition comprising a source of ferrous ions and 0.0001-0.05 wt% of a bis (2-pyridylthio-1-oxide) non-ferrous

metal salt, Amidaiji et al further teaches that solvents may be contained or absent in the curable composition, and the solvents are used in such an amount that the proportion thereof to the curable composition is in the range of 1 to 99% by weight (col.18, lines 20-41). Since the organic antifouling agent, preferred examples of which include copper pyrithione and zinc pyrithione, are present in an amount of 0.1 to 20% by weight per 100 parts by weight of solid contents of the composition of Amidaiji et al, and the solvent of the composition is present in an amount of 1 to 99% by weight, hence the solid contents of the composition is present in an amount of 1 to 99% weight of the composition, then there is an overlap in the range of values for the amount of organic antifouling agent of Amidaiji et al and the range of values for the bis(2-pyridylthio-1-oxide) non-ferrous salt of the instant claim; it has been established that in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists.

Though Amidaiji et al does not teach a diorganopolysiloxane composition comprising a source of ferrous ions of the instant claim, since the specifically listed pigments in the invention of Amidaiji et al and the list of known iron oxide powder in the art are limited, furthermore, since the color generated by each iron oxide is different, motivated by the desire to form compositions with various colors, it would have been obvious to one of ordinary skill in the art to have formed the compositions of Amidaiji et al, using different iron oxide powder, including ferrous oxide, which is black iron oxide, by routine experimentation with an expectation of success.

The metal pyrithione compounds, exemplified by zinc pyrithione and copper pyrithione and the ferrous oxide powder of Amidaiji et al serve as the bis (2-pyridylthio-1-oxide) non-ferrous metal salt and the source of ferrous ions of the instant claim respectively.

Regarding **claim 2**, since Amidaiji et al teaches organopolysiloxane having functional groups capable of condensation reaction (abstract), this inherently teaches a condensation-reaction-curable diorganopolysiloxane composition. Furthermore, Amidaiji et al exemplifies the composition of the invention as room-temperature-curable organopolysiloxane paint compositions (col.21, lines 42-44).

Regarding **claim 3**, Amidaiji et al further teaches the composition comprising fillers that include calcium carbonate (col.17, line 65-col.18, line 4).

Regarding **claims 4 and 6**, since both the fillers, exemplified as calcium carbonate and the ferrous oxide powder pigment of Amidaiji et al are present in the composition of Amidaiji et al, then the fillers, exemplified as calcium carbonate contains the ferrous oxide powder pigment and vice-versa.

Regarding **claims 10,11, 13** Amidaiji et al teaches a process for producing a curable composition, a coating composition or a curable antifouling paint composition (col.3, lines 60-65); said composition comprising (A), an organopolysiloxane having functional groups capable of condensation reaction at both molecular terminals thereof (abstract),

and further teaches that it is preferred that the organopolysiloxane (A) of the invention be represented by the formula [alpha] (col.4, lines 27-43); Amidaïji et al further teaches the composition comprising organic antifouling agents which include metal pyrithione compounds and that the preferred organic antifouling agents include copper pyrithione and zinc pyrithione; said organic antifouling agent is contained in an amount of 0.1 to 20% by weight per 100 parts by weight of solid contents of the composition (col.15, line 65-col.16, line 46); Amidaïji et al further teaches the composition comprising pigments, examples of which include iron oxide powder (col.17, lines 39-40).

The organopolysiloxane (A) represented by the formula [alpha] of Amidaïji et al is a diorganopolysiloxane, hence the composition of Amidaïji et al is a diorganopolysiloxane composition.

Amidaïji et al further exemplifies mixing and agitating the components of the composition of the invention (col.23, lines 25-31).

Though Amidaïji et al does not teach a method of inhibiting or reducing discoloration of a diorganopolysiloxane composition comprising the step of mixing said composition with a source of ferrous ions of the instant claim, since the specifically listed pigments in the invention of Amidaïji and the list of known iron oxide powder in the art are limited, and the color generated by each iron oxide is different, motivated by the desire to form compositions with various colors, it would have been obvious to one of ordinary skill in the art to have formed the compositions of Amidaïji et al using each of the known iron oxide powder, including ferrous oxide, by routine experiment with an expectation of success.

Though Amidaiji et al does not teach a method of inhibiting or reducing discoloration of a diorganopolysiloxane composition comprising the step of mixing said composition with 0.0001-0.05 wt% per total weight of the composition of a bis(2-pyridylthio-1-oxide) non-ferrous salt per total weight of the composition of the instant claim, Amidaiji et al further teaches that solvents may be contained or absent in the curable composition, and the solvents are used in such an amount that the proportion thereof to the curable composition is in the range of 1 to 99% by weight (col.18, lines 20-41). Since the organic antifouling agent, preferred examples of which include copper pyrithione and zinc pyrithione, are present in an amount of 0.1 to 20% by weight per 100 parts by weight of solid contents of the composition and the solvent is present in an amount of 1 to 99% by weight, hence the solid contents of the composition is present in an amount of 1 to 99% weight of the composition, then there is an overlap in the range of values for the amount of organic antifouling agent of Amidaiji et al and the range of values for the bis(2-pyridylthio-1-oxide) non-ferrous salt of the instant claim; it has been established that in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists.

The metal pyrithione compounds, exemplified by zinc pyrithione and copper pyrithione and the ferrous oxide powder of Amidaiji et al serve as the bis (2-pyridylthio-1-oxide) non-ferrous metal salt and the source of ferrous ions of the instant claim respectively. Though Amidaiji et al does not teach a method of inhibiting or reducing discoloration of a diorganopolysiloxane composition of the instant claim, the examiner notes that this is an inherent property of a composition that depends on the components of the

composition and since all the components of the composition of Amidaiji et al fall within the ranges of the components of the claimed diorganopolysiloxane composition, then the method of inhibiting or reducing discoloration of a diorganopolysiloxane composition the applicants claim is inherently exhibited by the composition of Amidaiji et al.

Regarding **claim 12**, Amidaiji et al further teaches the composition of the invention comprising fillers, examples of which include calcium carbonate (col.17, line 64-col.18, line 10); since both the fillers, exemplified as calcium carbonate and the ferrous oxide powder pigment are present in the composition of Amidaiji et al, then the fillers, exemplified as calcium carbonate contains the ferrous oxide powder pigment and vice-versa. Hence, in relation to the filler of Amidaiji et al, the ferrous oxide is an impurity.

Regarding **claim 14**, Amidaiji et al further teaches curable silicone rubber compositions as one-package type or two-package type (col.1, lines 29-31); though Amidaiji et al does not teach the method of inhibiting or reducing discoloration wherein there is provided a two part composition of the instant claim, motivated by the desire to prevent premature curing and/or enhance storage stability, it would have been obvious to one of ordinary skill in the art to have formed the composition of Amidaiji et al as a two-package type (two part) composition. Furthermore, since concerning the metal pyrrhione compounds and the ferrous oxide powder of Amidaiji et al, there are only four options for their inclusion in the two part composition – either together or separately with or without a diorganopolysiloxane polymer, motivated by the desire to find the

combination that generates the best stable composition, it would have been obvious to one of ordinary skill in the art to have formed various two part type compositions of the invention of Amidaiji et al, including those wherein the metal pyrithione compounds and the ferrous oxide powder are in separate parts of the composition, each with a diorganopolysiloxane polymer by routine experimentation with an expectation of success.

The part which comprises the metal pyrithione compounds and a diorganopolysiloxane polymer of Amidaiji et al serves as the first part of the instant claim.

The part which comprises the ferrous oxide powder and a diorganopolysiloxane polymer of Amidaiji et al serves as the second part of the instant claim.

Regarding **claims 15,16, 17, 18**, Amidaiji et al teaches a curable composition comprising (A), an organopolysiloxane having functional groups capable of condensation reaction at both molecular terminals thereof (abstract), and further teaches that it is preferred that the organopolysiloxane (A) of the invention be represented by the formula $[\alpha]$ (col.4, lines 27-43); Amidaiji et al further teaches the composition comprising organic antifouling agents which include metal pyrithione compounds and that the preferred organic antifouling agents include copper pyrithione and zinc pyrithione; said organic antifouling agent is contained in an amount of 0.1 to 20% by weight per 100 parts by weight of solid contents of the composition (col.15, line 65-col.16, line 46); Amidaiji et al further teaches the composition comprising pigments, examples of which include iron oxide powder (col.17, lines 39-40).

The organopolysiloxane (A) represented by the formula [alpha] of Amidaiji et al is a diorganopolysiloxane, hence the composition of Amidaiji et al is a diorganopolysiloxane composition.

Though Amidaiji et al does not teach a diorganopolysiloxane composition discoloration inhibiting or reducing agent comprising the reaction product of: a source of ferrous ions of the instant claim, since the specifically listed pigments in the invention of Amidaiji and the list of known iron oxide powder in the art are limited, and the color generated by each iron oxide is different, motivated by the desire to form compositions with various colors, it would have been obvious to one of ordinary skill in the art to have formed the compositions of Amidaiji et al using each of the known iron oxide powder, including ferrous oxide, by routine experiment with an expectation of success.

Though Amidaiji et al does not teach a diorganopolysiloxane composition discoloration inhibiting or reducing agent comprising the reaction product of: a source of ferrous ions; and 0.0001-0.05 wt% per total weight of the diorganopolysiloxane composition into which it is to be introduced of a bis(2-pyridylthio-1-oxide) non-ferrous salt of the instant claim, Amidaiji et al further teaches that solvents may be contained or absent in the curable composition and the solvents are used in such an amount that the proportion thereof to the curable composition is in the range of 1 to 99% by weight (col.18, lines 20-41). Since the organic antifouling agent, preferred examples of which include copper pyrrhione and zinc pyrrhione, are present in an amount of 0.1 to 20% by weight per 100 parts by weight of solid contents of the composition and the solvent is present in an amount of 1 to 99% by weight, hence the solid contents of the composition is present in

an amount of 1 to 99% weight of the composition, then there is an overlap in the range of values for the amount of organic antifouling agent of Amidaiji et al and the range of values for the bis(2-pyridylthio-1-oxide) non-ferrous salt of the instant claim; it has been established that in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists.

The metal pyrrithione compounds, exemplified by zinc pyrrithione and copper pyrrithione and the ferrous oxide powder of Amidaiji et al serve as the bis (2-pyridylthio-1-oxide) non-ferrous metal salt and the source of ferrous ions of the instant claim respectively.

Amidaiji et al inherently teaches a diorganopolysiloxane discoloration inhibiting or reducing agent of the instant claim, since the metal pyrrithione compounds, exemplified by zinc pyrrithione and copper pyrrithione and the ferrous oxide powder of Amidaiji et al contained in the diorganopolysiloxane composition of Amidaiji et al inherently react to form the reaction product of the instant claim.

Regarding **claim 19**, Amidaiji et al teaches a curable composition comprising (A), an organopolysiloxane having functional groups capable of condensation reaction at both molecular terminals thereof (abstract), and further teaches that it is preferred that the organopolysiloxane (A) of the invention be represented by the formula [alpha] (col.4, lines 27-43); Amidaiji et al further teaches the composition comprising organic antifouling agents which include metal pyrrithione compounds and that the preferred organic antifouling agents include copper pyrrithione and zinc pyrrithione (col.15, line 65-

col.16, line 46); Amidaiji et al further teaches the composition comprising pigments examples of which include iron oxide powder (col.17, lines 39-40).

Amidaiji et al further teaches curable silicone rubber compositions as one-package type or two-package type (col.1, lines 29-31); though Amidaiji et al does not teach a two part composition of the instant claim, motivated by the desire to prevent premature curing and/or enhance storage stability, it would have been obvious to one of ordinary skill in the art to have formed the composition of Amidaiji et al as a two-package type (two part) composition. Furthermore, since concerning the metal pyrithione compounds and the iron oxide powder of Amidaiji et al, there are only four options for their inclusion in the two part composition – either together or separately with or without a diorganopolysiloxane polymer, motivated by the desire to find the combination that generates the best stable composition, it would have been obvious to one of ordinary skill in the art to have formed various two part type compositions of the invention of Amidaiji et al, including those wherein the metal pyrithione compounds and the iron oxide powder are in separate parts of the composition, each with a diorganopolysiloxane polymer by routine experimentation with an expectation of success.

The part which comprises the metal pyrithione compounds and a diorganopolysiloxane polymer of Amidaiji et al serves as the first part of the instant claim.

The part which comprises the iron oxide powder and a diorganopolysiloxane polymer of Amidaiji et al serves as the second part of the instant claim.

Though Amidaiji et al does not teach a two part composition comprising a second part which comprises a diorganopolysiloxane polymer and a source of ferrous ions of the instant claim, since the specifically listed pigments in the invention of Amidaiji and the list of known iron oxide powder in the art are limited, and the color generated by each iron oxide is different, motivated by the desire to form compositions with various colors, it would have been obvious to one of ordinary skill in the art to have formed the compositions of Amidaiji et al using each of the known iron oxide powder, including ferrous oxide, by routine experiment with an expectation of success.

The metal pyrrhione compounds, exemplified by zinc pyrrhione and copper pyrrhione and the ferrous oxide powder of Amidaiji et al serve as the bis (2-pyridylthio-1-oxide) non-ferrous metal salt and the source of ferrous ions of the instant claim respectively.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLATUNDE S. OJURONGBE whose telephone number is (571)270-3876. The examiner can normally be reached on Monday-Thursday, 7.15am-4.45pm, EST time, Alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571)272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

O.S.O.

/Margaret G. Moore/
Primary Examiner, Art Unit 1796

1/15/09
mgm